ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 52

[EPA-R03-OAR-2021-0017; FRL-10023-69-Region 3]

Air Plan Approval; Maryland; Baltimore Area Base Year Inventory for the 2015 Ozone National Ambient Air Quality Standards

AGENCY: Environmental Protection Agency (EPA).

ACTION: Proposed rule.

SUMMARY: The Environmental Protection Agency (EPA) is proposing to approve a state implementation plan (SIP) revision submitted by the State of Maryland. This revision consists of the base year inventory for the Baltimore, Maryland marginal nonattainment area (Baltimore Area) for the 2015 ozone national ambient air quality standards (NAAQS). This action is being taken under the Clean Air Act (CAA).

DATES: Written comments must be received on or before **[insert date 30 days after date of publication in the Federal Register]**.

ADDRESSES: Submit your comments, identified by Docket ID No. EPA-R03-OAR-2021-0017 at https://www.regulations.gov, or via email to David.Talley@epa.gov. For comments submitted at Regulations.gov, follow the online instructions for submitting comments. Once submitted, comments cannot be edited or removed from Regulations.gov. For either manner of submission, EPA may publish any comment received to its public docket. Do not submit electronically any information you consider to be confidential business information (CBI) or other information whose disclosure is restricted by statute. Multimedia submissions (audio, video, etc.) must be accompanied by a written comment. The written comment is considered the official comment and should include discussion of all points you wish to make. EPA will generally not consider comments or comment contents located outside of the primary submission (i.e., on the web, cloud, or other file sharing system). For additional submission methods, please

contact the person identified in the **For Further Information Contact** section. For the full EPA public comment policy, information about CBI or multimedia submissions, and general guidance on making effective comments, please visit https://www.epa.gov/dockets/commenting-epa-dockets.

FOR FURTHER INFORMATION CONTACT: Serena Nichols, Planning & Implementation Branch (3AD30), Air & Radiation Division, U.S. Environmental Protection Agency, Region III, 1650 Arch Street, Philadelphia, Pennsylvania 19103. The telephone number is (215) 814-2053. Ms. Nichols can also be reached via electronic mail at Nichols.Serena@epa.gov.

SUPPLEMENTARY INFORMATION: On July 30, 2020, the Maryland Department of the Environment (MDE), on behalf of the State of Maryland, submitted a revision to the Maryland SIP entitled, "2015 8-Hour Ozone NAAQS (0.070 ppm) Marginal Area State Implementation Plan for the Baltimore, MD Nonattainment Area, SIP # 20-08." This SIP revision, referred to in this rulemaking action as the "Baltimore base year inventory SIP," addresses the base year inventory requirement for the 2015 ozone NAAQS.

I. Background

On October 1, 2015, EPA strengthened the 8-hour ozone NAAQS, lowering the level of the NAAQS from 0.075 ppm parts per million (ppm) to 0.070 ppm. 80 FR 65292 (October 26, 2015). Effective August 3, 2018, EPA designated the Baltimore Area, consisting of Anne Arundel, Baltimore, Carroll, Harford, and Howard Counties and the City of Baltimore, all in Maryland, as marginal nonattainment for the 2015 ozone NAAQS. 83 FR 25776 (June 4, 2018). CAA section 182(a)(1) requires ozone nonattainment areas classified as marginal or above to submit a comprehensive, accurate, current inventory of actual emissions from all emissions sources in the nonattainment area, known as a "base year inventory." The Baltimore base year inventory SIP addresses a base year inventory requirement for the Baltimore Area.

II. Summary of SIP Revision and EPA Analysis

A. EPA's Evaluation of the Baltimore Base Year Inventory SIP

EPA's review of Maryland's base year inventory SIP for the Baltimore Area indicates that it meets the base year inventory requirements for the 2015 ozone NAAQS. As required by 40 CFR 51.1315(a), MDE selected 2017 for the base year inventory, which is consistent with the baseline year for the reasonable further progress (RFP) plan because it is the year of the most recent triennial inventory. MDE included actual ozone season emissions, pursuant to 40 CFR 51.1315(c).

EPA prepared a Technical Support Document (TSD) in support of this rulemaking. In that TSD, EPA reviewed the results, procedures, and methodologies for the SIP base year, and found them to be acceptable and developed in accordance with EPA's technical guidance. The TSD is available online at http://www.regulations.gov, Docket ID No. EPA-R03-OAR-2021-0017.

B. Base Year Inventory Requirements

In EPA's December 6, 2018 (83 FR 62998) rule, "Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements," known as the "SIP Requirements Rule," EPA set out nonattainment area requirements for the 2015 ozone NAAQS. The SIP Requirements Rule established base year inventory requirement, which were codified at 40 CFR 51.1315. As required by 40 CFR 51.1315(a), each 2015 ozone nonattainment area to submit a base year inventory within 2 years of designation, i.e., by no later than August 3, 2020.

Also, 40 CFR 51.1315(a) requires that the inventory year be selected consistent with the baseline year for the RFP plan as required by 40 CFR 51.1310(b), which states that the baseline emissions inventory shall be the emissions inventory for the most recent calendar year for which a complete triennial inventory is required to be submitted to EPA under the provisions of subpart A of 40 CFR 51, Air Emissions Reporting Requirements, 40 CFR 51.1-50. The most recent triennial inventory year conducted for the National Emissions Inventory (NEI) pursuant to the Air Emissions Reporting Requirements (AERR) rule is 2017. 73 FR 76539 (December 17,

2008). Maryland selected 2017 as their baseline emissions inventory year for RFP. This selection comports with EPA's implementation regulations for the 2015 ozone NAAQS because 2017 is the inventory year. 40 CFR 51.1310(b).[1] Further, 40 CFR 51.1315(c) requires emissions values included in the base year inventory to be actual ozone season day emissions as defined by 40 CFR 51.1300(q), which sates: Ozone season day emissions means an average day's emissions for a typical ozone season work weekday. The state shall select, subject to EPA approval, the particular month(s) in the ozone season and the day(s) in the work week to be represented, considering the conditions assumed in the development of RFP plans and/or emissions budgets for transportation conformity.

C. Baltimore Base Year Inventory SIP

The Baltimore base year inventory SIP contains an explanation of MDE's 2017 base year emissions inventory for Baltimore (2017 Baltimore BYE) for stationary, non-point, non-road, and on-road anthropogenic sources, as well as biogenic sources, in the Baltimore Area. MDE estimated anthropogenic emissions for volatile organic compound (VOC), nitrogen oxide (NOx), and carbon monoxide (CO) for a typical ozone season workweek day.

MDE developed the 2017 Baltimore BYE with the following source categories of anthropogenic emissions sources: point, quasi-point, non-point, non-road, on-road, biogenic, and commercial marine vessels, airport, and railroad emissions sources (MAR). Appendix A of the Baltimore base year inventory SIP, 2017 Base Year SIP Emissions Inventory Methodologies (Appendix A), sets out the methodologies MDE used to develop its base year inventory.[2]

1. Point Sources

---

[1] On January 29, 2021, the Court of Appeals for the D.C. Circuit issued its decision regarding multiple challenges to EPA's implementation rule for the 2015 ozone NAAQS which included, among other things, upholding this provision allowing states to use an alternative baseline year for RFP. *Sierra Club v. EPA*, No. 15-1465 (D.C. Cir.) (mandate not yet issued). The other provisions of EPA's ozone implantation rule at issue in the case are not relevant for this rulemaking.

[2] The Appendix A – 2017 Base Year SIP Emission Inventory Methodologies, submitted with the 2015 8-Hour Ozone NAAQS Marginal Area State Implementation Plan for the Baltimore, MD Nonattainment Area is included in the docket for this rulemaking available online at https://www.regulations.gov, Docket ID: EPA-R03-OAR-2021-0017.

Point sources are larger sources that are located at a fixed, stationary location. As defined by the AERR in 40 CFR 51.50, point sources are large, stationary (non-mobile), identifiable sources of emissions that release pollutants into the atmosphere. A point source is a facility that is a major source under 40 CFR part 70 for one or more of the pollutants for which reporting is required by 40 CFR 51.15 (a)(1). These point sources can be associated with a single point or group of points in space. Examples of point source emissions categories include power plants, industrial boilers, petroleum refineries, cement plants, and other industrial plants.

As stated in Appendix A, for the 2017 Baltimore BYE, MDE defined a point source located within a designated ozone nonattainment area as a stationary commercial or industrial facility that operations and emits more than 10 tons per year (tpy) of VOC; or 25 tons per year of NOx; or a 100 tpy of CO, sulfur oxides (SOx), particulate matter with an aerodynamic diameter less than 10 micrometers (PM_{10}), diameter less than 2.5 micrometers ($PM_{2.5}$), and total suspended particulates (TSP).

In Appendix A, MDE explains that it used several methods of source identification to ensure the point source inventory is as complete as possible. MDE's primary data source is its permitting program. MDE's compliance program identifies other point sources though facility inspections and investigations. In addition, facilities are required by Maryland's emissions statement regulations, Code of Maryland Regulations (COMAR) 26.11.01.05-1 and 26.11.02.19D to certify the air emissions for the past calendar year. The certified emissions are used for inventory and planning purposes.

MDE's Air and Radiation Management Administration (ARMA) developed the point source data for the 2017 base year inventory. The point source inventory contains emissions for electric generating units (EGU) and Non-EGU sources in the nonattainment area (NAA). EPA guidance for emissions inventory development provides that ozone season day emissions are used for the base year inventory for the NAA. ARMA developed their 2017 inventory by using emissions directly reported to the agency by facilities as required by Maryland air quality

regulations. These emissions are also reported to EPA, and after going through EPA's quality assurance (QA) and quality control (QC) process, are included in EPA's National Emissions Inventory (NEI). The emissions for this base year can be found in EPA's 2017 NEI.[3]

2. Quasi-Point Sources

MDE defines quasi-point sources as that are generally considered part of the non-point or non-road emissions sectors but are included in the point source emissions inventory for a particular reason. In Appendix A, MDE states that such reasons include Federal guidance, as in the case of certain airports, or to facilitate future general conformity determinations, as in the case of military bases, ports, and other similar facilities. EPA has reviewed the source categories included in the quasi-point sources and has found this to be a reasonable approach to handle these sources.

3. Non-Point Sources

Non-point sources are also called "area sources." These sources collectively represent individual sources of emissions that have not been inventoried as specific point or mobile sources. These individual sources treated collectively as non-point sources are typically too small, numerous, or difficult to inventory using the methods for the other classes of sources.

Non-point sources that MDE evaluated for the 2017 Baltimore BYE include petroleum distribution losses (e.g., tank truck unloading and auto refueling), stationary source solvent application (e.g., dry cleaners, auto refinishing), bioprocess emissions sources (bakeries, breweries, wineries, distilleries), catastrophic/accidental releases (e.g., oil spills), solid waste disposal treatment, and recovery (e.g., open burning), small stationary source fossil fuel use (e.g., small utility boilers), fugitive sources (e.g., construction activity and unpaved roads), fire sources (e.g., agricultural burning and vehicle fires), and ammonia sources (e.g., agricultural livestock production operations). Appendix A sets out the methodologies MDE used to estimate emissions

[3] The TSD for the Base Year Inventory Submitted with the 2015 8-Hour Ozone NAAQS Marginal Area State Implementation Plan for the Baltimore, MD Nonattainment Area, included in the docket for this rulemaking available online at https://www.regulations.gov, Docket ID: EPA-R03-OAR-2021-0017

for each of these non-point source categories. These methods are consistent with the most recent EPA emission inventory guidance.

4. Non-Road Mobile Sources

Non-road mobile sources are also called "off-highway" mobile sources. These are defined as a non-road engine or non-road vehicle. As per 40 CFR 51.50, a non-road engine is an internal combustion engine (including the fuel system) that is not used in an on-road motor vehicle or a vehicle used solely for competition, or that is not affected by sections 111 or 202 of the CAA. Also defined by 40 CFR 51.50, a non-road vehicle (rather than engine) is a vehicle that is run by a non-road engine and that is not an on-road motor vehicle or a vehicle used solely for competition. Examples of non-road mobile sources include airport ground support equipment, agricultural and construction equipment powered by an internal combustion engine, and lawn and garden engines and equipment.

As explained in Appendix A, consistent with EPA's Emission Inventory Guidance for Implementation of Ozone and Particulate Matter NAAQS and Regional Haze Regulations, MDE used the most current version of EPA's NONROAD2008a model, which is incorporated into EPA's Motor Vehicle Emission Simulator (MOVES) model, specifically MOVES2014a, to develop the inventory for non-road mobile sources. The NONROAD2008a model includes more than 80 basic and 260 specific types of non-road equipment and further stratifies equipment types by horsepower rating. Fuel types include gasoline, diesel, compressed natural gas (CNG), and liquefied petroleum gas (LPG).

5. Marine Vessels, Airport, Railroad Locomotives (MAR) Sources

MAR is a non-road sub-category. MDE states in its Baltimore base year inventory SIP that, for MAR sources, MDE calculated emissions by collecting data directly from surveyed sources, or activity from state and federal reporting agencies. To develop the commercial marine vehicle emissions for the base year, Maryland used EPA's 2016 beta modeling platform. This platform was used because it provided the most recent descriptions and methodologies for

calculation of marine vessel emissions. To estimate emissions for aircraft, Maryland used airport activity statistics from the Federal Aviation Administration (FAA), landing and takeoff cycle information from the Maryland Aviation Administration, and statewide survey information for landing and takeoffs, engine type, location, and usage data. Railroad emission estimates were developed using activity and fuel consumption estimates collected from the rail companies and proportioned to each county by the amount of track miles each company utilized in a county. MDE applied EPA emission factors using EPA guidance and methodologies or the best engineering method. These methods of calculating emissions are consistent with the most recent EPA emission inventory guidance.[4] Details of the development of emissions for these sources along with other non-road model sources are provided in Appendix A of Maryland's July 30, 2020 submittal.

6. On-Road Mobile Sources

On-road mobile sources are also called "highway mobile sources." These sources are the motor vehicles (e.g., automobiles, buses, trucks) traveling on local and highway roads. On-road mobile sources should be estimated by the latest recommended on-road mobile source models. Currently, that means EPA's MOVES model for all states but California.

In addition to emissions from vehicles' exhaust, the MOVES model estimates evaporative emissions for mobile sources, which must be included in the inventory. Volatile hydrocarbons evaporate from the fuel system while a vehicle is refueling, parked, or driving. Evaporative processes differ from exhaust emissions because they don't directly involve combustion, which is the main process driving exhaust emissions.

As stated in Appendix A, MDE used EPA's MOVES2014a model to estimate the 2017 annual emissions as well as 2017 daily emissions from on-road vehicles and total energy consumption in Maryland. Emissions were estimated based on emission factors and vehicle

[4] Emission Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations, Page 130, included in the docket for this rulemaking available online at https://www.regulations.gov, Docket ID: EPA-R03-OAR-2021-0017 PG 130

activity. Emission factors for vehicles were based on vehicle type such as passenger cars, passenger trucks, vehicle age and the vehicle's operating modes. Operating modes for running, start, and idle emissions are included in MOVES. The emission factors varied over a range of conditions, such as the ambient air temperature, speed, traffic conditions, road types, road topography, etc. The generated emission factors were then multiplied by the appropriate vehicle miles traveled (VMT) to estimate emission.

In order to estimate both the rate at which emissions are being generated and to calculate VMT, MDE examined its road network and fleet to estimate vehicle activity. For the annual inventories, this was done for each of the twelve months in 2017 and aggregated for the entire year. MDE used computer models to perform these calculations by simulating the travel of vehicles on the Maryland's roadway system.

EPA has reviewed the results, procedures, and methodologies for the SIP base year, as well as comparing the inventory with previously QA/QC'd data in EPA's 2017 NEI for any data discrepancies and found none. EPA has therefore determined the base year inventory to be acceptable and developed in accordance with EPA's technical guidance.

7. Biogenic Emissions

MDE also inventoried biogenic emissions, which are not included in the anthropogenic total. Biogenic emissions come from natural sources, including vegetation, soils, volcanic emissions, lightning, and sea salt. They need to be accounted for in photochemical grid models, as most types are widespread and ubiquitous contributors to background formation of ozone. However, they are not included in the RFP baseline.

Biogenic emissions are typically computed using a model which utilizes spatial information on vegetation and land use and environmental conditions of temperature and solar radiation. The model inputs are typically horizontally allocated (gridded) data, and the outputs are gridded biogenic emissions which can then be speciated and utilized as input to photochemical grid models. In Appendix A, MDE explains that it used the data files created and

made available by EPA. MDE computed biogenic emissions with a modified version of EPA's Biogenic Emission Inventory System (BEIS) model that utilized county land use data from EPA's land use inventory and temperature and cloud cover data from the National Weather Service. This method is acceptable under EPA's emission inventory guidance.[5]

8. Emissions Summary

The Baltimore base year inventory SIP contains a summary of 2017 ozone season day emissions by source category, which is presented in Table 1 of this document. Tables 2 through 7 of this document present the 2017 Baltimore BYE by source category and county. In the Baltimore base year inventory SIP, MDE notes that the biogenic emissions in Table 1 are taken from EPA's NEI 2014 database. Total biogenic emissions for July 2014 were divided by 31 days to develop average ozone season day emissions for each jurisdiction in the Baltimore Area and then added together to develop the Baltimore Area total.

Table 1. 2017 Baltimore BYE Summary (tons per ozone season day)

Source Category	VOC	NOx	CO
Point	5.729	47.530	18.902
Quasi-Point	1.310	7.274	6.549
Non-Point	72.233	10.931	26.954
Non-Road	21.314	13.164	330.888
MAR	0.930	7.440	3.848
On-Road Mobile	25.860	53.720	365.010
Anthropogenic Total	**127.379**	**140.060**	**752.152**
Biogenic	227.640	2.740	24.550

Table 2. 2017 Baltimore BYE Point Source Emissions (tons per ozone season day)

County Name	VOC	NOx	CO
Anne Arundel County	0.885	13.079	5.523
Baltimore County	0.876	11.531	2.788
Carroll County	0.390	8.342	5.568
Harford County	0.471	3.110	0.422
Howard County	1.036	1.266	0.920
Baltimore City	2.070	10.202	3.682
Baltimore Area Total	**5.729**	**47.530**	**18.900**

Table 3. 2017 Baltimore BYE Quasi-Point Source Emissions (tons per ozone season day)

County Name	VOC	NOx	CO

[5] Emission Inventory Guidance for Implementation of Ozone and Particulate Matter National Ambient Air Quality Standards (NAAQS) and Regional Haze Regulations, Page 100, included in the docket for this rulemaking available online at https://www.regulations.gov, Docket ID: EPA-R03-OAR-2021-0017 PG 130

Anne Arundel County	0.793	4.009	4.554
Baltimore County			
Carroll County			
Harford County	0.451	2.451	1.634
Howard County			
Baltimore City	0.066	0.815	0.361
Baltimore Area Total	**1.310**	**7.274**	**6.549**

Table 4. 2017 Baltimore BYE Non-Point Source Emissions (tons per ozone season day)

County Name	**VOC**	**NOx**	**CO**
Anne Arundel County	16.532	2.090	2.836
Baltimore County	20.168	3.200	4.206
Carroll County	4.810	0.595	2.922
Harford County	9.111	1.007	12.685
Howard County	7.745	1.375	1.617
Baltimore City	13.867	2.665	2.689
Baltimore Area Total	**72.233**	**10.931**	**26.954**

Table 5. 2017 Baltimore BYE Non-Road Source Emissions (tons per ozone season day)

County Name	**VOC**	**NOx**	**CO**
Anne Arundel County	5.818	3.263	80.901
Baltimore County	6.421	4.725	102.577
Carroll County	1.572	0.980	26.043
Harford County	2.645	1.590	30.234
Howard County	2.712	1.500	53.191
Baltimore City	2.145	1.107	37.943
Baltimore Area Total	**21.314**	**13.164**	**330.888**

Table 6. 2017 Baltimore BYE MAR Source Emissions (tons per ozone season day)

County Name	**VOC**	**NOx**	**CO**
Anne Arundel County	0.113	1.623	0.776
Baltimore County	0.634	2.277	1.833
Carroll County	0.027	0.188	0.497
Harford County	0.031	0.469	0.321
Howard County	0.013	0.302	0.075
Baltimore City*	0.112	2.582	0.348
Baltimore Area Total	**0.930**	**7.440**	**3.848**

*Emissions from marine vessels at the Port of Baltimore are included here.

Table 7. 2017 Baltimore BYE Mobile Source Emissions (tons per ozone season day)

County Name	**VOC**	**NOx**	**CO**
Anne Arundel County	6.17	12.33	85.88
Baltimore County	8.12	17.72	117.58
Carroll County	2.13	3.10	21.86
Harford County	2.73	5.26	35.31
Howard County	3.12	8.21	54.20
Baltimore City	3.60	7.10	50.18
Baltimore Area Total	**25.86**	**53.72**	**365.01**

III. Proposed Action

EPA's review of this material indicates the Baltimore base year inventory SIP meets the base year inventory requirement for the 2015 ozone NAAQS for the Baltimore Area. Therefore, EPA is proposing to approve the Baltimore base year inventory SIP, which was submitted on July 30, 2020. EPA is soliciting public comments on the issues discussed in this document. These comments will be considered before taking final action.

IV. Statutory and Executive Order Reviews

Under the CAA, the Administrator is required to approve a SIP submission that complies with the provisions of the CAA and applicable Federal regulations. 42 U.S.C. 7410(k); 40 CFR 52.02(a). Thus, in reviewing SIP submissions, EPA's role is to approve state choices, provided that they meet the criteria of the CAA. Accordingly, this action merely approves state law as meeting Federal requirements and does not impose additional requirements beyond those imposed by state law. For that reason, this proposed action:

- Is not a "significant regulatory action" subject to review by the Office of Management and Budget under Executive Orders 12866 (58 FR 51735, October 4, 1993) and 13563 (76 FR 3821, January 21, 2011);
- Does not impose an information collection burden under the provisions of the Paperwork Reduction Act (44 U.S.C. 3501 *et seq.*);
- Is certified as not having a significant economic impact on a substantial number of small entities under the Regulatory Flexibility Act (5 U.S.C. 601 *et seq*.);
- Does not contain any unfunded mandate or significantly or uniquely affect small governments, as described in the Unfunded Mandates Reform Act of 1995 (Public Law 104-4);
- Does not have Federalism implications as specified in Executive Order 13132 (64 FR 43255, August 10, 1999);
- Is not an economically significant regulatory action based on health or safety risks subject to Executive Order 13045 (62 FR 19885, April 23, 1997);

- Is not a significant regulatory action subject to Executive Order 13211 (66 FR 28355, May 22, 2001);
- Is not subject to requirements of section 12(d) of the National Technology Transfer and Advancement Act of 1995 (15 U.S.C. 272 note) because application of those requirements would be inconsistent with the CAA; and
- Does not provide EPA with the discretionary authority to address, as appropriate, disproportionate human health or environmental effects, using practicable and legally permissible methods, under Executive Order 12898 (59 FR 7629, February 16, 1994).

In addition, this proposed rulemaking, proposing to approve Maryland's base year inventory SIP for the 2015 ozone NAAQS, does not have tribal implications as specified by Executive Order 13175 (65 FR 67249, November 9, 2000), because the SIP is not approved to apply in Indian country located in the State, and EPA notes that it will not impose substantial direct costs on tribal governments or preempt tribal law.

List of Subjects in 40 CFR Part 52

Environmental protection, Air pollution control, Carbon monoxide, Incorporation by reference, Intergovernmental relations, Ozone, Reporting and recordkeeping requirements, Nitrogen dioxide, Volatile organic compounds.

Dated: May 19, 2021

Diana Esher,
Acting Regional Administrator,
Region III.

[FR Doc. 2021-11441 Filed: 5/28/2021 8:45 am; Publication Date: 6/1/2021]